Piercing Glass Plates With Spark Coil

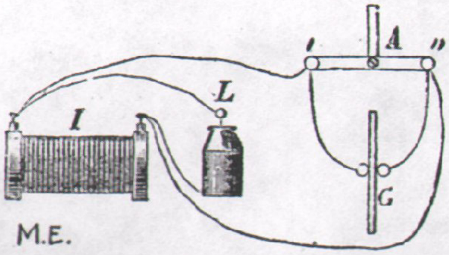
Our young friends possessing a one-inch coil and a quart Leyden jar can easily perform the interesting experiment of piercing glass plates as follows:

Connect Leyden jar, L, to induction coil, I,, as shown in sketch. A discharger, A, must now be constructed, which is preferably made of very dry wood, which had been boiled in paraffine or oil for about 15 minutes. It should have the shape as shown in cut.

The main part is about 6 inches long, in the centre of which a small handle is fastened by means of one or two wood-screws. Two binding posts, I and II, are fastened to the ends of the longer part of discharger. Two stiff brass wires, No. 14, and about 6″ long, carry a small brass ball at their respective ends. The two loose ends are firmly attached to the binding posts of dischargers.

If now a glass plate, G, is placed between the two balls and coil is started, the plate will soon be pierced by the spark. The larger the coil, the heavier the plate may be.

When charging Leyden jars, as explained above, the sparks are much shorter, but they are very much heavier and give an intense bluish-green light, accompanied with a strange and piercing report.



The experimenter must be careful when carrying a charged Leyden jar not to touch the brass ball (connecting with the inner coating) with the free hand, as a tremendous shock will be the consequence and in most cases the jar will be dropped and of course broken.